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ABSTRACT

This memorandum relates to some of the conceptual and operational aspects of the problem of establishing connections between institutional research activities and institutional practices. The first topic discussed is Appraisal of Institutional Research Activities and Needs, which includes an outline and several pertinent questions related to the following areas: distribution of course work, curriculum; field of concentration choice; graduate study and career patterns; grading systems and meaning of grades, evaluation of student achievement; retention-withdrawal patterns; student characteristics; analyses of student performance; correlates of performance; counseling and advisement; advanced placement and accelerated programs; trends and developments in higher education, normative information; public relations, institutional image; faculty characteristics and conditions of service; and student-faculty evaluations. The second topic discussed is Anticipation of Research Needs: Implications for Institutional Record-Keeping, which is followed by emphasis on the importance of establishing the potential implications for practice of particular "research projects" under the topic heading of Research and Practice. Then the contents of Student Personnel Data Rosters from the CRC Data Bank and one way of tabulating information from the roster are presented. Local Analysis of Research-Related Data briefly discusses the use by the member colleges of the CRC data bank, and the format for description of follow-up data in punched card format is provided. (DB)

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COLLECTED NOTES ON THE CONNECTIONS
BETWEEN INSTITUTIONAL RESEARCH
AND INSTITUTIONAL PRACTICE

Kenneth M. Wilson

June 14, 1971

CRC 71-06-14

For Interinstitutional Cooperation
in Institutional Research

In affiliation with
EDUCATIONAL TESTING SERVICE, PRINCETON, N. J.

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Introduction

Member colleges of College Research Center have participated in activities involving the collection, analysis, and dissemination of information on student and institutional characteristics. At the same time, they have not always found it possible to see the connections between the activities involved in collecting and analyzing information, and the types of activities which characterize their institutional practices--in admissions, counseling, placement, evaluation, or planning.

From time to time, some of the conceptual and operational aspects of the problem of establishing connections between institutional research activities--such as those proposed for and/or engaged in by CRC-member colleges--and institutional practices have been treated in brief memoranda prepared for distribution to CRC-member colleges.

Because this is a continuing and basic problem, several of these memoranda have been selected for presentation here in order to encourage further rumination and reflection.

Appraisal of Institutional-Research Activities and Needs

All colleges concerned with the development and/or improvement of IR should take a complete inventory of the types of surveys, reports, and/or analyses conducted or issued periodically (or on an ad hoc basis) by various offices, committees, or individuals on each campus--registrar or recorder, dean of the college, dean of students (freshmen), vocational or placement bureau, alumnae office, admissions office, dean of the faculty, standing committees of the college, etc.

An inquiry designed to yield such information would be of substantial value locally in pointing up possibilities for the coordination and refinement of extant activities on each campus and in calling attention to areas which may require new or intensified effort. From the point of view of the Center,* such information would permit development of plans for activities in such a way as to minimize duplication of effort and maximize the potential contribution of a coordinated, interinstitutional approach.

Underlying the foregoing, of course, is the general assumption that one of the goals of our cooperative endeavor is to facilitate the development on each campus of an "institutional research function".

It has been suggested that a set of "guidelines" be prepared to facilitate an overview of relevant areas. An outline of areas which theoretically are relevant for all institutions of higher learning is appended. For each topic or area, several pertinent questions are cited.

The areas identified for examination are as follows:

- I. Distribution of course work; curriculum
- II. Field-of-concentration choice
- III. Graduate study and career patterns
- IV. Grading systems and the meaning of grades; evaluation of student achievement
- V. Retention-withdrawal patterns; attrition
- VI. Student characteristics; analysis of input
- VII. Correlates of performance in the college
- VIII. Counseling and advisement
- IX. Advanced placement and accelerated programs
- X. Trends and developments in higher education; normative perspective
- XI. Public relations; institutional image
- XII. Faculty characteristics and conditions of service
- XIII. Student-faculty evaluations

*A cooperatively sustained agency of several liberal arts colleges, designed to serve as a central coordinating and research facility.

It should be emphasized, of course, that the areas outlined above and the questions offered for consideration in each area are by no means exhaustive of potentially significant foci for institutional research activities. The need for reliable knowledge obviously is not restricted to the areas outlined here!

Appraising Institutional Needs for Information

With respect to each of the areas enumerated in the outline, several questions should be asked on every campus:

- 1) What is the amount and quality of information available to us in this area?
- 2) Who is (has been) responsible for this area? What individual, office, or committee has been most closely identified with the initiation and/or conduct of inquiries pertaining to this area?
- 3) For what purposes have studies or analyses been undertaken? Are inquiries (studies) conducted periodically or on an ad hoc basis? How and by whom are research findings used?
- 4) What types of reports have resulted?
- 5) What has been (is) the typical distribution pattern for reports?
- 6) Do we feel that this area is one to which more attention might profitably be directed? Should be directed?

With respect to the total process of institutional inquiry suggested in the tentative guidelines, it is important to ask whether or not there is any formal or informal allocation of responsibility for overall coordination, implementation, and/or evaluation.

The objectives of an inquiry of the type proposed here are severalfold:

- a) to facilitate local evaluation of the current status of "institutional-research-related activities" on each campus;
- b) to determine the extent and nature of "institutional" requirements for information, exploration and study, and to assess the extent to which those requirements are being met.

- c) to explore various approaches to the allocation of responsibilities on each campus for the development and implementation on an "institutional research function" designed to meet recognized institutional requirements; and
- d) to consider ways in which the College Research Center might help to coordinate, supplement, and facilitate the growth and development of an institutional research function on each campus.

It is perhaps unnecessary to note that an inquiry oriented to these objectives may be of considerable value as a vehicle for identifying, discussing, and analyzing problems of communication across administrative-departmental lines which sometimes tend to form on a college campus as well as a means for identifying "institutional needs for research information" and ways of meeting those needs, including consideration of the role of the College Research Center (or a similar central, coordinating agency).

It is clear that such an inquiry may be conducted in a variety of ways, with varying degrees of intensity of effort and corresponding variations in depth of analysis, discussion, and study of issues, alternatives, and implications.

Accordingly, further consideration of objectives and concomitant exploration of alternatives with respect to procedure and methods of inquiry may well be in order.

Some Assumptions

It is assumed that exploration of institutional-research needs and ways of meeting those needs, and active consideration of the question of whether or not a college should accept responsibility for an "institutional-research function," are inherently worthwhile and potentially beneficial activities on any campus.

It is further assumed that clarification of institutional concerns and responsibilities vis a vis an institutional-research function is essential to clarification of the roles and functions of the College Research Center which must be considered in relation to extant and/or proposed institutional programs and activities with a view to identifying the unique contribution of an interinstitutional model.

Finally, assuming that these tentative guidelines are used to initiate a process of assessment and discussion consistent with the objectives outlined above, it is important that attention not be restricted to the areas tentatively suggested for consideration but that efforts be made to consider all major areas in which identifiable patterns of "information and study requirements" exist and generate questions to which it is believed attention should be given.

Selected Areas of Institutional Inquiry and
a Sampling of Pertinent Questions

I. Distribution of course work; curriculum

What is the actual distribution, among the major academic areas, of course work completed by majors in the respective fields of concentration?

Which majors show the widest distribution of work outside their own field?

Do students with a relatively wide distribution pattern differ in educationally-relevant ways from students who exhibit a "minimal" spread of courses?

What courses or programs have been added or discontinued over a period of years?

II. Field of concentration choice

What is the current distribution of students among major fields? At graduation? At point of first formal declaration of major? At point of entry into college? How does this distribution compare with that of five years ago?

How many students change major field prior to graduation? What are the typical patterns of change among major fields? What are the factors underlying "change of field?" What changes in academic performance, if any, tend to accompany a shift in field of concentration?

What are the characteristic patterns of abilities, interests, values, etc., associated with choice of (successful completion of work in) the respective fields of concentration?

III. Graduate study and career patterns

How many students go on to graduate study in the year following graduation? Later? What is the incidence of graduate school attendance by undergraduate major field? By undergraduate grade average?

What are the characteristics of students who go directly into graduate study following the bachelor's degree? Of students who delay entry into graduate school? [GRE scores, undergraduate grade average, CEEB scores at time of entry into college, etc.]

What is the typical pattern of graduate-school choice among graduating seniors? What are the characteristics of students admitted to each of the graduate schools normally attracting a sizeable number of graduating seniors? Does probability of gaining admission vary according to the graduate school (department) under consideration?

What percentage of entering freshmen plan to pursue study beyond the baccalaureate degree? What percentage of seniors plan graduate study? What are some of the factors associated with changes in motivation for graduate study during the college years? What is the relationship between plans and actual behavior?

How do students plan to finance graduate study? How do they actually finance their study? What is the record of our students in regard to graduate-fellowship attainment? NSF? Woodrow Wilson?

What career fields are most frequently planned (followed) by our students (former students)? Has this pattern changed or remained relatively stable?

What types of information do our students need (seek) in the area of graduate-study-and-career planning?

IV. Grading systems and meaning of grades; evaluation of student achievement

What is the characteristic distribution of letter grades assigned by the faculty? Does the distribution of letter grades vary from department to department?

Has the distribution of grades remained relatively stable over recent years or has it changed? Do grading standards adequately reflect the general academic "quality" of work done by students?

Has "quality" of work done by students increased in recent years?

What procedures are actually employed in "arriving at" a grade for a student?

What is the relationship between grades and other criteria of "success" in college? Between grades and tested achievement (e.g. GRE)? Between grades and admission to graduate school or graduate-school record? Between grades and career orientation?

V. Retention-withdrawal patterns

What is the retention rate for the college? What proportion of an entering class graduates on schedule? Has this figure changed in recent years? What percentage of "high promise" freshmen continue through graduation? Transfer to other colleges? Drop out of higher education?

What is the characteristic pattern for withdrawals? How many students withdraw after the first year? Second year? Are there significant differences (in ability, background, academic performance) between the first- and second-year withdrawal groups?

What is the record of collegiate accomplishment of former students of the college who have transferred to other institutions?

Which students are most likely to "survive"?

VI. Student characteristics

Summaries (studies, reports) showing distributions of test scores, standing in secondary-school, geographic origins, type of secondary school attended, financial aid status, etc., for entering classes.

Summaries (studies, reports) involving use of tests and inventories administered during orientation week (attitudes, values, achievement in selected fields, etc.).

VII. Analyses of student performance: correlates of performance

What is the overall performance record (grade record, "survival" record, honors, etc.) of various "subgroups?" (For example, graduates of public high schools and private high schools, respectively; students with alumnae connections; students with first-term grades which place them in the top quarter of their Class, or bottom quarter; etc.).

Analyses designed to reveal the extent and nature of relationships between student attributes at entrance (admissions-related variables) and their subsequent records at the college.

VIII. Counseling and advisement

What proportion of the student body receives professional (psychiatric, psychological) assistance during the year?

How does this vary by Class? What are the major problems presented by these students? Can these students usefully be differentiated from their classmates in terms of characteristics at time of entrance into college?

What are the major problems of the freshman year? As viewed by faculty? As viewed by the students?

What are the major advisement problems of the upperclass years?

IX. Advanced placement and accelerated programs

What is the overall performance record of students who are given course credit and/or advanced standing on the basis of test performance? Of students who present advanced placement tests?

X. Trends and developments in higher education; normative information

Ad hoc compilations, from secondary sources, of information of a normative nature, e.g., number of women earning a Ph.D. in selected fields, enrolment trends for various categories of institutions, distributions of earned baccalaureate degrees in various fields, average faculty salaries by type of institution and rank.

Routine and/or ad hoc questionnaires or letters of inquiry on questions of special interest, addressed to selected colleges, e.g., retention-withdrawal rates at 15 or 20 liberal arts colleges.

XI. Public relations; institutional image

What do the parents of our students believe to be the primary purposes of higher education? What do they expect of the college? To what extent do they "support" (agree with) institutional policies in regard to parietal regulations, etc.

What do our major feeder schools "know" about us? What types of stereotypes obtain? To what extent are these stereotypes valid?

What are alumnae reactions to their undergraduate experience?

XII. Faculty characteristics and conditions of service

What are the baccalaureate origins of faculty? What is the sex composition of the faculty? Has there been any recent change of a substantial nature in regard to either of the foregoing?

What is the average tenure of faculty by department? By sex? What is the pattern of mobility of faculty who leave the college? Toward what types of institutions do they tend to gravitate?

What is the average "teaching load" for senior faculty? Beginning teachers? How does this compare with conditions in comparable institutions?

What are the major problems faced by the "new" faculty member with little or no prior teaching experience?

XIII. Student-faculty evaluations

What are the major purposes of the college as perceived by faculty? By students?

What are the major elements in "effectiveness of instruction" as viewed by students? As viewed by faculty?

What are student attitudes toward parietal rules?

What are students' reactions to their undergraduate experience.

Anticipation of Research Needs: Implications for Institutional Record-Keeping

Traditionally, institutional records and data collection procedures (e.g., admissions application blanks, registration and/or personnel data-forms completed by students, faculty, and other members of the college community; special testing programs, cumulative record cards, etc., etc.,) have been developed to serve a variety of important administrative and instructional purposes. However, in the development of these records and related data-collection procedures, less than adequate attention has been given to the prior assessment of the current patterns of use of "information" and still less attention to consideration, at conceptual and operational levels, of identifiable patterns of potential use, given clearly stated assumptions about the tasks which designated "potential users" are to perform within the college. As a consequence, we often find considerable duplication of effort in eliciting basic information and perhaps more important, less than full or effective utilization of the rich store of "information" which is normally available (in some form) on essentially every aspect of an institution's operations.

In such circumstances, it is quite safe to suggest that few extant institutional records systems, or patterns of "information-accession-and-retrieval procedures," reflect what we may term "anticipation of needs for institutional research and evaluation." As we know, the conduct of studies is contingent upon availability of data for analysis. Traditionally (and recently, as all recorders and registrars in member colleges of the Center will attest) the collection of the data necessary to carry out institutional research (to implement an institutional-research function) has been (a) completely ad hoc, often requiring special, unfamiliar procedures for recording and coding familiar information--what may be termed the basic, every-day variables of academic life, and (b) traumatic, in degrees ranging from mild to moderately severe.

Acceptance of a "research and evaluation function" as a recognized institutional responsibility to itself and to its constituents, both present and prospective, should lead logically to consideration of ways in which the function can be carried out most effectively. At this juncture, it would seem evident that the likelihood of successfully implementing a "research-and-

evaluation function" will be enhanced by incorporating into the normal routines of the college provisions for recording, coding, and retrieving basic data in anticipation of institutional-research needs.

Thus, for example, an institution which accepts a responsibility for regularly monitoring freshman-year grade average, retention-withdrawal patterns, choice of major field and changes in major field, career plans of students, graduate study plans of students--to name only a few of the many types of variables which might be considered "basic variables of academic life"--can insure that the responsibility can be met with a minimum of ad hoc effort by anticipating the major types of questions to which it needs (wishes) answers.

From the point of view of an interinstitutional model, it is necessary to adopt certain common definitions of procedure with respect to the form in which research-related data are "reported" (recorded) in order to insure critically important interinstitutional comparability.

This whole area has great theoretical and practical significance. Small beginnings of a practical nature (by deciding on selected "basic items" to be coded and collected in a particular way) will be highly useful both as a basis for identifying and clarifying sticky procedural problems and as a basis for testing the utility of the suggested approach.

The CRC coding for major field, for retention-withdrawal patterns, etc., with appropriate clarification of existing ambiguities, might provide a starting point for a Center-wide effort.

Research and Practice

In the report of discussion at one meeting of CRC Trustees, direct and implicit references were made to the general question of the relationship of "research" to "practice" on each campus. The following reference is basically illustrative:

The importance of developing regular (i.e., normal or routine) patterns in regard to the use of research-related material (e.g., career plans, questionnaires, measures of student achievement, surveys of graduate-study plans) was stressed. Our long-run aim should be to assimilate our basic research-related activities into the normal life of the college, and hence make such activities an expected and accepted aspect of campus life.

Some of the implications of this position are noted in the section of this memorandum entitled "anticipation of research needs: implications for institutional record-keeping." If we assume that one of the basic goals of a research function on any campus should be to illuminate, to help clarify, and to facilitate the interpretation of the basic phenomena of academic life, it follows that identification of the "data" to be studied will require direct attention to practice (which, of course, embodies the interaction of the "basic phenomena or variables of academic life").

At a less ethereal level, we may examine some practical situations which have arisen for their value in helping us to see more clearly the fundamental nature of the question which is being raised about research and practice.

The first illustration arises in respect to the Personal Values Inventory. This inventory was administered initially on an "experimental" basis to see whether or not it would provide some "useful" information about student motivation--useful, for the purpose of predicting academic performance. This inventory was administered as a "research project" in two subsequent years by most Center Colleges and in September, 1966, by three Center colleges.

The research completed reveals that this Inventory does contain information which is "useful" in the sense alluded to above. However, the fundamental question of how the information from the PVI was to have been used within the framework of institutional practices then extant (or contemplated) was not

clarified at the outset. Hence, the "research" outcome, while "favorable", did not relate to any "institutional practice" decision (plan for regular or periodic use of the inventory for counseling, etc.).

The second illustration, related to the foregoing in a generic sense, involves use of the College Student Questionnaires, Part 1. Certain ways of "using" the information have already been demonstrated and we have only begun to begin to study the interrelationships of the CSQ data to criterion variables. There is more than adequate research utility in the available CSQ data. However, significant questions relating to "institutional practice" remain to be considered in connection with this important project, including the following:

- a) Does the college wish to continue administering the CSQ, Part 1, each fall?
- b) Can the type of information yielded by the CSQ, Part 1, be incorporated satisfactorily into extant (or contemplated) institutional advisory, counseling, placement, or research-and-development systems?

From the notes of our last meeting: With regard to all Center-related "testing", it was agreed that a standard set of instructions, explanations of purpose, etc., should be prepared for use on each participating campus.

It is recognized that it is neither feasible nor desirable (fortunately) to pin down in detail all aspects of the potential "use" of the types of information alluded to above. However, it is believed that the two illustrations help to clarify the question. From an operational point of view, it is important to establish clearly the potential implications for practice of particular "research projects" undertaken.

After an attempt to deal all too briefly with a complex general question, let it be said for purposes of clarity that none of the foregoing has been intended to convey the point of view that some or all "research findings" are expected to (should be expected to) have some "practical counterpart". The process through which educational research findings are assimilated into the mainstream of thought and action on any campus is too complex to warrant any such anticipation. Moreover, there is great potential for multi-purpose use in the College Student Questionnaires, Part 1, which as noted earlier, we have only begun to see prospectively.

The major consideration underlying this "analysis" is that it is quite important to consider the question of how a particular "data collection routine" (a survey of questionnaire, a personality inventory, a follow-up questionnaire) fits in with an extant (or contemplated) institutional rationale for the collection, analysis, and dissemination (use) of "information".

Student Personnel Data-Rosters from the CRC Data Bank

One of the principal functions of the College Research Center is to establish and maintain a "data bank" for research purposes. And, in most discussions pertaining to development of the Center's program, emphasis has been placed on the types of research projects which the data bank will make possible.

In a very real sense, one of the most important objectives of our research efforts should be to develop a body of reliable knowledge regarding the relationships between student characteristics and educational outcomes. Knowledge that certain student characteristics are related (or not related) to certain criteria of academic performance, to certain types of student-progress variables, or to specific educational outcomes can be useful in many different areas--e.g., in admissions, counseling, placement, and institutional evaluation. Thus, for example, research leading to the identification of characteristics associated with student achievement, and to the development and refinement of the "prediction of academic performance," generates information which has implications for counseling since the counselor may need to know the "academic prospects" of students with certain characteristics when dealing with a particular student having those characteristics. This type of information was of value to the admissions committee in evaluating the relative promise of various candidates and it also could be of value in other areas of institutional life, including evaluation (where knowledge of input-output relationships is critical).

Consequently, it is important to keep in mind that most, if not all, the information about students now being collected through CSQ and other programs (e.g., preadmissions data, estimates of academic potential, career plans and aspirations, family and educational background, educational interests and expectations, and the like) has great potential value--a value which can be realized fully only (a) if we have adequate knowledge of the "meaning" of the information for particular situations and (b) if the information is accessible to those who need it in a form which is convenient for use.

Generally speaking, the information stored in a data file on students can be made available for institutional use in a variety of ways. One useful way in which student personnel data can be made available for use in counseling or in other appropriate areas is the roster-format.

Roster of Student Characteristics

A roster being prepared for one member college includes the following information for each student in the Class of 1968:

1. The freshman-year average grade (FAG)

From College Student Questionnaires, Part 1, administered during orientation week in Fall, 1964, coded responses to items on:

2. tentative choice of major field (Item 10)
3. intentions regarding postgraduate or professional study (Item 16)
4. plans for earning a doctoral degree (item 21)
5. long-run career preferences (Item 26)
6. 15-year career goal: "housewife" versus "career outside the home" (Item 31)

From the admissions record:

7. Converted Secondary School Bank
8. Score on the SAT-Verbal
9. Score on the SAT-Mathematical
10. Average of CEEB achievement tests presented
11. "Persistence" score from the Personal Values Inventory administered during orientation week in Fall, 1964

An excerpt from the roster is given below:

Student data--Class of 1968												
Name of student		Freshman average	Coded data for CSQ items					Rank	V	M	Ach	PVI
			(10)	(16)	(21)	(26)	(31)				Av	Persist
Aaste	Laurie	1.00	26	2	2	3	4	58	62	56	59	9
Alle	Jean	2.75	32	3	NR	8	5	68	52	52	61	30
.
.
Deeg	Amy	2.12	14	1	1	5	6	64	59	58	61	17

The roster format permits identification of specified characteristics of individual students for use as deemed appropriate locally. Information is arranged in such a way as to permit comparisons of data for individual students. Moreover, a variety of cross-tabulations (FAG versus plans for graduate study; Persistence scores versus FAG; etc.) can be accomplished quite conveniently by any interested observer.

By way of illustration, the first student listed earned a freshman average of 1.00, planned at time of college entrance to major in English (CSQ Item 1C, code 26); tentatively planned to continue in postgraduate school (CSQ Item 16, code 2); planned to work toward a master's degree (CSQ Item 21, code 2); etc. Her converted school rank of 58 is somewhat below average for her Class and the PVI Persistence score of 9 is quite low.

Tabulations of PVI Persistence scores for a sample of students in this class indicate that the scale differentiates high- and low-achieving students-- the mean score for students was 25 while low-achievers had a mean of 16.

The foregoing is intended simply to illustrate the contents of the roster, and one of many possible ways of tabulating information from the roster in order to explore relationships of interest and potential importance.

There are many operational questions which require attention: e.g., What information should be included: When should it be made available? To whom should it be made available? etc,

The sample roster under consideration here, which requires a code sheet for its interpretation, is not thought of as exemplary either in content or in format, but rather as a first step in calling to the attention of all member colleges one of the many possible ways in which information stored in the data bank can be made available.

Local Analysis of Research-Related Data

Most of the member colleges of the Center have moved, or are now moving, to establish data-processing offices or computer centers, and in most instances member colleges have access to equipment needed for tabulating items in IBM punched-card format. For example, Randolph-Macon Woman's College and Sweet Briar College, in cooperation with Lynchburg College, have established a jointly operated Educational Computer Center; Trinity College opened its data-processing office in 1966, a similar office was established at Wheaton College even earlier, and the Vassar College Computer Center has been in operation for some time.

One of the major problems in getting local research efforts underway, and indeed it is a major problem in any research effort, is that of recording, collating, and analyzing "data." We are all fully aware of this problem, and through our joint effort have begun to "put together" a variety of basic information about our students and their behavior during the college years in a format which permits extensively varied treatment of the data in order to pursue different lines of questioning. The first major obstacle to the analysis of data has, therefore, been at least partially removed--the Center is still engaged in the process of transferring follow-up data from rosters to punched-card format and in clearing up important questions of "meaning," "coding," and "collating with existing material," for example.

Once substantive data of the type we have begun to accumulate have been "organized" and translated into machine-processable formats (IBM cards or magnetic tape, for example) their research uses are essentially unlimited--that is to say there are as many "research uses" as there are ways of formulating researchable questions about complex phenomena. Given "organized data," availability of (access to) basic IBM sorting and tabulating equipment will permit a wide range of local initiative in the analysis of such data by each member college--elaborate computer facilities are not necessary for much basic analysis.

The conduct of systematic studies at the Center level, involving all member colleges, can provide the normative frame of reference which, in the last analysis, is essential to interpreting many "local" findings. Local (i.e., institutional) use of the data, however, can proceed apace

without the time-lag which may tend to be necessary for development of Center-level analyses.

Accordingly, it has seemed desirable to work toward development of procedures for making available to each member college, as soon as practicable, the college's data in the CRC data-bank, in punched-card format. Attached is an illustrative document outlining an interpretive summary of the punched-card format of data. Documents similar to the attached, used in conjunction with the relevant set of coding instructions (in this case the CRC document of July, 1966), and the institution's copy of the data roster, will provide a relatively clear description of the data.

Illustrative Format for Description of
Follow-up Data in Punched-Card Format

TRINITY COLLEGE

Interpretation of Follow-up Data Card
Class of 1966^{*}

IBM Card column(s)	Roster column(s)	Description of Item
1	--	Card Number
	<u>Codes</u> 1	Card 1 (Summer, 1966, follow-up data, Class of '66)
2,3	--	College identification code (CRC)
4	--	Class identification--the last digit of the year of graduation is entered in this column
5,9	--	Page and line of the roster on which the student's name occurs (I.D. Number)
10,21	1	Last name of student (within limits of the number of spaces allotted)
22,29	1	First name of student (within limits of the number of spaces allotted)
30	1	Middle initial
31	2	Statement describing student progress at end of year

* See CRC Coding Instructions, July 1966 and institutional copy of the basic data-roster on which the items described here were reported.

IBM Card column(s)	Roster column(s)	Description of Item
		<u>Code</u>
		1 Student has graduated summa cum laude
		2 Student has graduated magna cum laude
		3 Student has graduated cum laude
		4 Student has graduated with distinction
		5 Student has graduated
		6 Student is continuing in progress toward a baccalaureate degree
		7 Student has withdrawn, officially
		8 Student is on leave and is expected to return
		9 Student is now a member of another class, due to acceleration or because she took leave
32	3	Number of terms completed by student as of the end of the academic year (and/or time of official withdrawal, as applicable)
		<u>Code</u>
		0 Less than one term 5 Five terms
		1 One term 6 Six terms
		2 Two terms 7 Seven terms
		3 Three terms 8 Eight terms
		4 Four terms 9 More than eight terms
33	4	Academic status of student at end of the year (or at time of withdrawal or granting of leave, as applicable).
		<u>Code</u>
		1 Student's academic record was satisfactory-- minimum institutional requirements and reg- ulations governing academic progress were being met or exceeded.
		2 Student's academic record was "less than minimally satisfactory"--cumulative record or record for the year or term, below minimum institutional requirements: student placed on probation, formally warned about academic record in whole or in part, notified formally of unsatisfactory progress.
34	5	Status of students who withdraw--continuing students coded "9" in this column. For all students officially classified as "withdrawn", indicated whether student transferred (probably transferred or planned to transfer

IBM Card column(s)	Roster column(s)	Description of Item
		to another institution or did not do so; a best estimate is sufficient.
		<u>Code</u>
		1 Student transferred to another institution of higher learning
		2 Student did not transfer
		3 No information upon which to base an estimate
		9 Student continuing
35	6	College classification of withdrawals--only withdrawals are coded in this column.
		<u>Code</u>
		1 Withdrew for Personal Reasons
		2 Academic Dismissal
		3 Disciplinary Dismissal
36,38	7	First-term average grade (A+ = 4, A=3, B=2, C=1, D and F = 0; average is credits earned divided by hours <u>carried</u>)
39,41	8	Senior-year average grade
42,44	9	Four-year cumulative average
45,47	10	Jr-Sr year average grade--average of grades earned during the third and fourth years combined
48	11	Student status at entry
		<u>Code</u>
		1 Regular--typical of the normal school-to- college entering group and not classifiable as below or as a transfer
		2 Foreign student
		3 Culturally or educationally disadvantaged (U.S. citizen)
		4 Early admissions after three years of high school
		5 Freshmen with advanced standing
		6 Received advanced placement credit
49,51	12	Freshman-level choice of major field
52,54	13	Sophomore-level choice of major field
55,57	14	Senior-level choice of major field
58,59	15	Total number of hours of course work "carried" during freshman year, all courses

IBM Card column(s)	Roster column(s)	Description of Item
60,61	16	Hours of work "carried" in mathematics and natural science courses
62,63	17	For transfer students, year of transfer to this institution--last 2 digits of year
64	--	Special code for Irregularities